



FEE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460  
OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION  
OFFICE OF PESTICIDE PROGRAMS REGISTRATION DIVISION (7505P)

~~DOCUMENT CONTAINS CONFIDENTIAL BUSINESS INFORMATION~~

**DP BARCODE No.:** D458442 & D458288; **FILE SYMBOL/REG. No.:** 42750-GTE(a); **PRODUCT NAME:** Lambda Cyhalothrin Technical; **DECISION No.:** 551655; **PC Code(s):** 128897; **ACTION CODE:** R333; **FOOD Use:** Yes; **REGISTRANT:** Albaugh, LLC

~~DOCUMENT CONTAINS CONFIDENTIAL BUSINESS INFORMATION~~

DATE: August 31, 2020

SUBJECT: Product Chemistry Review of "Lambda Cyhalothrin Technical"

FROM: Shyam Mathur, Ph.D.; *sbmathur* 8-31-2020  
Product Chemistry Team Leader,  
CITAB/RD(7505P)

THROUGH: Kerry Leifer, Branch Chief,  
CITAB/RD (7505P)

**KERRY LEIFER**

Digitally signed by KERRY  
LEIFER  
Date: 2020.08.31 11:45:53  
-04'00'

TO: Jacquelyn Herrick, RM 03  
I-V Branch-1 / RD (7505P)

**Active Ingredient(s):** Lambda Cyhalothrin (96.6%); **Product label Claim :** 96.6%

**MRID No(s):** Submitted - 50850201 (Summary of product chemistry data)  
50850202 (group B data)  
51183601 & 51183602 (new data)

## INTRODUCTION

The product chemistry review for the proposed technical product was reviewed previously (see PCR dated 03-25-2020, DP453428, MRID No's. 50850201 & -02). It was concluded that all the group A product chemistry data submitted was acceptable along with the proposed basic CSF (dated 6-03-2019; nominal concentration of AI is 96.6%). The following deficiencies were found in the group B product chemistry data submitted and were reported to the applicant:

- 830.6313 - (study is required to determine stability of TGAI/MUP against metal & metal ions at RT & at elevated temperatures (54°C))
- 830.6314 – (study is required to determine compatibility/non-compatibility of TGAI/MUP with respect commonly used chemicals (oxidizing/reducing agents; MAP, organic solvent, water etc))
- 830.6317 – (one year or accelerated study must be conducted to determine the stability of TGAI/MUP using commercial container)
- 830.6320 - (one year or accelerated study must be conducted to determine the stability of TGAI/MUP using commercial container).

The registrant responded by submitting the deficient product chemistry with MRID Numbers 51183601 & -02. CITAB has been asked to determine the acceptability of the group B product chemistry data submitted.

**DP BARCODE No.:** D458442 & D458288; **FILE SYMBOL/REG. No.:** 42750-GTE(a); **PRODUCT NAME:** Lambda Cyhalothrin Technical; **DECISION No.:** 551655; **PC Code(s):** 128897; **ACTION CODE:** R333; **FOOD Use:** Yes; **REGISTRANT:** Albaugh, LLC

## CONCLUSIONS

CITAB has reviewed the product chemistry data submitted for the guideline 830.6313 (Stability against metal & metal ions ant at elevated temperature) , 830.6317 (ss) and 830.6320 (cc) and has concluded that:

1. 830.6313 – Partially acceptable.  
The data submitted for the guideline 830.6313 with respect to stability of TS at elevated temperature is acceptable. No data was submitted to determine stability of the TS against metal & metal ions. The applicant is recommended to determine this study and submit the results to the Agency for evaluation. The applicant has option to submit waiver request with proper scientific justifications.
2. 830.6314 (compatibility/non-compatibility) - Acceptable  
TS was found to be compatible to water, 5% ammonium phosphate, Fe powder, 5% potassium permanganate and Aromatic 200 Fluid.
3. 830.6317(Storage stability) – Acceptable.  
The TS was found to stable for two weeks at 54°C in HDPE bottles.
4. 830.6320 (accelerated corrosion characteristics) – Acceptable  
The TS was not corrosive to HDPE bottles when for two weeks at 54°C.

**DP BARCODE No.:** D458442 & D458288; **FILE SYMBOL/REG. No.:** 42750-GTE(a); **PRODUCT NAME:** Lambda Cyhalothrin Technical; **DECISION No.:** 551655; **PC Code(s):** 128897; **ACTION CODE:** R333; **FOOD Use:** Yes; **REGISTRANT:** Albaugh, LLC

830.1550 (product identity & composition) [MRID No. 50850203]

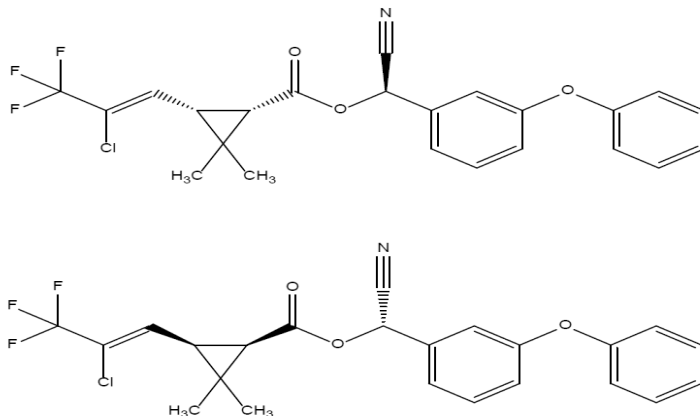
Common Name: Lamda Cyhalothrin

IUPAC Name: Mixture of isomers (*R*)- $\alpha$ -cyano-3-phenoxybenzyl (1*S*,3*S*)-3-[(*Z*)-2-chloro-3,3,3-trifluoropropenyl]-2,2-dimethylcyclopropanecarboxylate and (*S*)- $\alpha$ -cyano-3-phenoxybenzyl (1*R*,3*R*)-3-[(*Z*)-2-chloro-3,3,3-trifluoropropenyl]-2,2-dimethylcyclopropanecarboxylate  
OR  
Mixture of isomers (*R*)- $\alpha$ -cyano-3-phenoxybenzyl (1*S*)-*cis*-3-[(*Z*)-2-chloro-3,3,3-trifluoropropenyl]-2,2-dimethylcyclopropanecarboxylate and (*S*)- $\alpha$ -cyano-3-phenoxybenzyl (1*R*)-*cis*-3-[(*Z*)-2-chloro-3,3,3-trifluoropropenyl]-2,2-dimethylcyclopropanecarboxylate

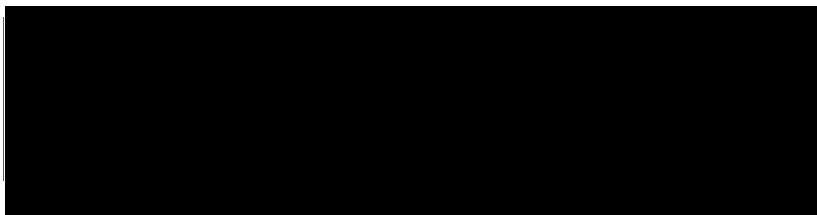
C.A. Name: (*R*)-cyano(3-phenoxyphenyl)methyl (1*S*,3*S*)-*rel*-3-[(1*Z*)-2-chloro-3,3,3-trifluoro-1-propen-1-yl]-2,2-dimethylcyclopropanecarboxylate

CAS Registry Number: 91465-08-6  
Molecular Formula:  $C_{23}H_{19}ClF_3NO_3$   
Molecular Weight: 449.85

Structure:



Manufacturing facility:



**DP BARCODE No.:** D458442 & D458288; **FILE SYMBOL/REG. No.:** 42750-GTE(a); **PRODUCT NAME:** Lambda Cyhalothrin Technical; **DECISION No.:** 551655; **PC Code(s):** 128897; **ACTION CODE:** R333; **FOOD Use:** Yes; **REGISTRANT:** Albaugh, LLC

**Group B Product chemistry data (physical-chemical characteristics)**

[MRID No. 50850201 and 50850202]

[MRID Nos. 51183601 and 51183602]

<b>Table 2: Physical and Chemical Properties for “Lambda Cyhalothrin Technical”</b>				
GLN	Requirement	MRID	Status	Result or Deficiency
830.6302	Color	50850201 50850202	A	Cream colored (Munsell color scale: 5Y 9/1)
830.6303	Physical state	50850201 50850202	A	Crystalline Solid
830.6304	Odor	50850201 50850202	A	Mild plastic odor
830.6313 830.6317	Stability to normal and elevated temperatures, metals, and metal ions	50850201 50850202 51183602	U	TS was stored in glass container for two weeks at 54°C. At the end of the exposure period, the exposed aliquot and the unexposed retain sample of the same lot were analyzed and the results compared to those from the initial assay. The assay values were found not to be significantly changed after storage at elevated temperature.  No tests were conducted to determine stability of TS against metal & metal ions at RT and elevated temperatures.
830.6314	Oxidation/reduction: chemical incompatibility	50850201 50850202 51183601	A	TS was found to be compatible with water, 5% Ammonium phosphate, Fe powder, 5% KMnO <sub>4</sub> and Aromatic 200 Fluid.
830.6315	Flammability	50850201 50850202	NA	
830.6316	Explodability	50850201 50850202	NA	
PE830.6317	Accelerated storage stability	50850201 50850202 51183602	A	TS was found to be stable for two weeks at 54°C when stored in HDPE bottles to simulate the commercial container and the results compared with those prior to storage. The contents of the active ingredient were determined by HPLC-UV at 230 nm using external standard calibration method.
830.6319	Miscibility	50850201 50850202	N/A	The product is a solid.
830.6320	Accelerated corrosion characteristics	50850201 50850202 51183602	A	The TS was stored in HDPE bottles for two weeks at 54°C to simulate the commercial container and the results compared with those prior to storage. No changes in the appearance or integrity of the test or reserve container were observed at any point over the storage interval. The container displayed an insignificant weight change over the storage interval.

**DP BARCODE No.:** D458442 & D458288; **FILE SYMBOL/REG. No.:** 42750-GTE(a); **PRODUCT NAME:** Lambda Cyhalothrin Technical; **DECISION No.:** 551655; **PC Code(s):** 128897; **ACTION CODE:** R333;  
**FOOD Use:** Yes; **REGISTRANT:** Albaugh, LLC

Table 2: Physical and Chemical Properties for “Lambda Cyhalothrin Technical”						
GLN	Requirement	MRID	Status	Result or Deficiency		
830.7000	pH	50850201 50850202	A	7.31 at 20.2°C		
830.7050	UV/Visible absorption	50850201 50850202	Cited Literature*1	Conditions	λ (nm)	ε (L/mol.cm)
				Neutral (MeOH: 99% w/w)	254	1090
					277	2070
830.7100	Viscosity	50850201 50850202	N/A	The product is a solid.		
830.7200	Melting point	50850201 50850202	A	49.5°C		
830.7220	Boiling point	50850201 50850202	N/A	The product is a solid.		
830.7300	Density	50850201 50850202	A	1.326 g/mL at 20.0°C		
830.7370	Dissociation constants in water (DC)	50850201 50850202	NA Cited *2	TS does not dissociate in water		
830.7550	Partition coefficient	50850201 50850202	A Cited*3	Log Pow = 7 @ 20.0°C		
830.7840	Water solubility	50850201 50850202	A Cited*3	Water solubility at 20.0 ± 0.5°C: 0.005 mg/L (pH 6.5);		
830.7950	Vapor pressure	50850201 50850202	A Cited*3	2 × 10 <sup>-4</sup> Pa ( at 20°C; est.) 2 × 10 <sup>-1</sup> Pa (at 60°C, interpolated)		
A = Acceptable; N = unacceptable (see Deficiency); N/A = Not Applicable; G = Data gap; I = In progress; U = Up-grade (additional information required); W = waivers						